



## **SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED**

*Study material for M.P.Ed Students*

### **METHODS OF RESEARCH**

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It seems appropriate at this juncture to explain the difference between research method and research methodology. Research method may be understood as all those methods/techniques that are used for conduct of research. Research methods or techniques thus refer to the methods the researcher use in performing research operation, in other words, all those methods which are used by the researcher during the course of studying his research problem are termed as research method, since the object of research, particularly the applied research, is to arrive at a solution for a given problem, the available data and the unknown aspects of the problem have to be related to each other to make a solution possible keeping this in view research methods can be put into the following method.

#### **1. Analytical Research :**

Type of research that involves in depth study and execution of available information in an attempt to explain complex phenomena. It can be categorized in the following way. Historical, philosophical, review and Meta analysis.

##### *a) Historical research. :*

History, the meaningful record of human achievement, helps us to understand the present and, to some extent, to predict the future. Historical research is the application of scientific method to the description and analysis of past events.

Historical analysis may be directed towards an individual event, movement institution or an organisation that has left an incredible mark on the stands of time.

The historical researcher does not bring dead to life to tell the untold tale of what happened, he depends upon the observations made by other individuals or look towards the object which do not articulate but reveal. Inferences drawn by him fill the gaps in the existing knowledge about things. In this attempt to put up a credible account, he may ask now and why things happened the way they did; what impact did they leave on life in general; how far observations made by others were objective and impartial; whether it would be possible to remove doubts from mind of people about the causes and effects of the earthshaking events; and how objective assessment of the situations could be made.

Values of Historical Research in Physical Education. :

1. Provide information about various schools of physical education, various agencies for professional teacher training and administration.
2. It enables the physical education workers to detect good and points to make necessary reforms.
3. It shows how the function of special institutions support and control about the local arrangement.
4. In the light of the origin and growth of physical education and sports numerous physical educational problems can be viewed sympathetically and without bias by the physical education teachers, the administrator or the public.
5. It is the sovereign solvent of physical educational prejudices.
6. It serves to the present physical educational ideals and standard of other times.
7. It enables physical educational workers to avoid the mistakes of the past.
8. It inspires respect for sound scholarship and reverence for great physical education teachers.

**Major Steps in Historical research. :**

- i) Collection of data through primary and secondary sources.
- ii) Internal and external criticism of the data collected (Historical criticism)

iii) Presentation of facts in a readable form involving problems of organization, composition, exposition and interpretation.

(i) **Collection of Data :**

It is usually classified into two main categories.

a) Primary sources (b) Secondary sources.

b) Primary source :

A Primary source of historical data is one that containing direct first hand information in the form of direct recording or direct reporting of experience about the event in the shape of a book. Written or oral testimony to a historical event, individual or object may come from a courtier, soldier, politician, prince, leader or even a common man who was an actual participant in or an eye witness to the event under consideration.

Manually written or mechanically reproduced written direct records at the event(s) concerned biographies, news paper reports, chronicles, proceedings or minutes of a conference or meeting, officials files or transcripts etc. are all categorized as primary sources.

Clarke and Clarke ( 1970) have put up a categorized comprehensive list of primary sources of historical data as given below:

Official records : Papers, minutes, budget honors, awards, attendance records, published materials, laws, court proceedings, decisions etc.

Personal records : Speeches articles, books diaries, degrees, autobiographies, oral statements, family histories, superstitions, rites and rituals etc.

Pictorial records: Photographs, movies, paintings, sketches, sculpture etc.

Published material : News paper account, year books, records, blanks, certificates, report cards, advertisements, contracts etc.

Secondary sources :

Secondary sources are the reports of a person who relates the testimony of an actual witness of, or participant in, an event. The writer of the secondary source was not on the

scene of the event, but merely reports what the person who was there, said or wrote. Secondary source at data are usually of limited worth for research purposes because at the errors that may result when information is passed on from one person to another. Most history textbooks and encyclopedias are examples at secondary source for they are after several times removed from the original, first hand accounts of events.

Some types of materials may be secondary sources for some purposes and primary sources for another for, example, a high school textbook in Indian history is ordinary a secondary source. But if one were making a study of the changing emphasis on nationalism in high school Indian history textbooks, the book would be a primary source of data.

(ii) **Historical criticism :**

Though the historical research worker is mainly dependent upon the primary and secondary sources but he cannot say how valid, reliable or significant data he has been able to collect. To verify the trust worthiness of the data the research worker use historical criticism, Historical criticism enables the researchers to classify and categorize the data so collected on the basis of their worth and value, and to synthesize various viewpoints-even though conflicting so as to create a incredible story.

Historical criticism has two aspects : external an internal criticism.

**External criticism :**

External criticism establishing the authenticity or genuineness of the data the research varify who is the author, physical chemical test at the documents, was the document written by a ghost writer or any other person, test of signature script, spelling, language and clothes, what were the qualifications of the author, to see the authenticity of the costume, equipments, and apparatus etc.

**Internal criticism :**

After the authenticity of historical documents or relics has been established, there is still the problem of evaluating their accuracy or worth. Although they may be genuine, do they reveal a true picture? what of the writers or creators ? were they competent, honest,

unbiased, and actually acquainted with the facts, or were they too antagonistic or too sympathetic to give a true picture ? Did they have any motives for distorting the account ? Were they subject to pressure, fear, or vanity ? How long after the event did they make a record of their testimony, and were they able to remember accurately what happened? Were they in agreement with other competent witnesses ?

Finally, the aim of the internal criticism is to evaluate the accuracy or worth of the documents collected by verifying the following –

Is the meaning of the words are same ?

Is the author has written seriously ?

Is the author expressed his real beliefs ?

How some after the event was the document written ?

Was the author biased in any way ?

Are the written sources evaluated with understanding at the times and conditions under which they were produced ?

### **Writing the Historical Report :**

A historical research report is different from other research reports for it is no outcome at numerical data but analysis and synthesis of the contents of writing, documents, all sorts of oral and documented evidence etc.

The writing of a historical research report is in no way different from the problem of documentation in reporting or any other study. Common steps are as under.

1. Selection of the problem
2. Significance of the problem
3. Hypothesis
4. Collection of data
5. **Interpretation** – on the basis of biographical or great man's theory idealistic philosophy, scientific and technological theory, economic condition social and culture development, geographical setting and sociological interpretation.

6. **Synthesis** – They are based upon unified then proper interpretation, logical analysis, showing evidences testing hypothesis, formulating conclusion and making generalization.

**Pit falls in Historical writing :**

The researcher should guard against the pitfalls or errors while historical writings such as Complete misunderstanding of the meaning of historical sources.

Attempts to fill historical gaps with little or no basic evidence.

Use of poor logic in handling historical matter and in drawing conclusions.

Biasness is one of the greatest dangers.

Carelessness in reporting.

2. **Philosophical method of Research :**

Philosophy is a school of wisdom. It is a criticism of the knowledge. In other words it is everything that has something to do with the thinking of living human beings. Philolophical research is the study of processes that thought and conduct of the principles of laws that regulate the universe and underline all knowledge and reality. Philosophical method is based on logical thinking and it is a way of getting at dependable generalizations through a systematc and disciplined examination of the questions raised by observation of a phenomenon philosophy projects the meaning drived from experience and from scientific knowledge in terms of norms and purposes appropriate for guidance of mans choice and conduct.

Philosophical studies are dedicated to envisioning ultimate ends and purposes, and should be considered tentative and subject to constant appraisal.

**Steps in philosophical Research :**

Steps in philosophical are almost the same as those in other type of research viz. identifying problem area, selecting a authentic title, defining the problem significance of the study delimitation of the study and bringing it to a manageable dimensions, formulating the stating hypothesis envisioning relationships, outline procedures of data collection etc.

Data collection in philosophical studies is not so easy as in scientific studies because the philosophic data are not numerical. It is in the form of subjective observations, beliefs or opinions at the individuals who have close association with and understanding the phenomenon under consideration.

Different steps for philosophical research are given below :

1. Identify the problem area.
2. Delimitations
3. Hypothesis
4. Significance of the study
5. Collection of data
6. Analysis of data
7. Interpretation of results
8. Discussion of the results describing general principles and seeing relationship
9. Reasonable conclusion.

**Precautions for philosophical research :**

- Intellectual inadequacy is the biggest hurdle
- Inexperienced and incompetent research worker.
- Lack of understanding of life values.
- Unawareness of the changing time politics, environment and undisciplined research worker.

**Philosophical problem areas in physical education :**

Philosophical research in physical education, by and large, has in its focus problems concerning ideals, ideas, values, value systems ethics, relationships, approaches to teaching methodologies etc.

**Following areas in physical education :**

- Values of sports and physical education.
- Making policies at state and national level.
- Teaching methods at school college and university level.
- Development of leadership.
- Amaturism, professionalism.
- Effectiveness of Olympic movements, ideals behind it.
- Internal sports competition their values.
- Physical education for training body and mind.

C) **Meta – Analysis :**

Meta Analysis is a systematic approach to the integration at findings from multiple independent studies, using the result from each included study as a single data point in a larger study.

The initial step in a meta analysis is to identify and obtained reports for all available studies on the topic at interest. In general this search process should be an exhaustive one.

The next step is to identify each possible comparison or effect that was made in each study.

Each of the effects found constitutes one case in the meta analysis.

**Two approaches may be taken in meta analysis. :**

- i) Treat each effect size as the independent measure for a subject in a single study having the characteristics associated with the effect.
- ii) To attempt to look for associations between effect sizes that appear to be inconsistent with the general trend and particular study characteristics.

d) **Review : A review is a critical evaluation of recent research on a particular topic.**

**Descriptive Research :**

It is concerned with status, These research attempts to determine the current state of such things as knowledge, attitudes and behaviour related to specific issue. The forms of descriptive research is questionnaire the interview, survey, the case study, the job analysis the documentary analysis developmental studies and co-relational studies.



Descriptive research blends both quantitative and qualitative techniques to get to the heart of the matter – the ultimate truth.

### **Survey research :**

This method involves systematic collection analysis, interpretation and reporting of pertinent facts related to an enterprise, an institution, population and some aspects.

- It describes and interprets what exists and how research worker infers to suggest some change, modification or improvement.
- It is related to existing condition.

### **Importance of survey :**

Following importance of survey are as given below :

- It determines present practices, condition and to suggest improvement.
- To make accurate judgement and to make future plans or line of action.
- To make appraisal of the enterprises, individual and the institutions.
- To describe, compare and evaluate present.
- As survey data come from relatively a large number of cases, the results of survey can be relied upon in making the appraisal of the situation more realistic.
- Survey enables researcher to establish and test whether a situation described some theory really exists.
- With usually large and cross sectional survey are very helpful in standardization of tests, tools and instruments used in evaluation of numerous phenomena in education, psychology sports etc.
- Most surveys aim to reveal what exists some may even trace the roots of a present phenomenon laying in the past, and some more may indicate what is likely in future.

### **Type of survey :**

There are different types of survey researches.

#### **1. Descriptive survey :**

Descriptive is a “ specific set of phenomena “ on the promise that the information gathered in itself the answer to the research question posed in the problem. It is normally conducted in behavioural research or sciences where an critical consideration. It can also be called an assessment of study who’s aim is to describe the status of a phenomena at a particular point at time. The purpose of descriptive survey is very much limited and inherent in the investigation itself to know and describe facts as they exist. Descriptive studies are conducted for the sake of knowledge. They are by and large, informatory.

## 2. **Public opinion survey :**

It studies the public opinion, may be gathered on social, educational recreational professional, political or religious aspect for the benefits of the society and the government.

- News-paper normally collected public opinion by surveying controversial or burning issue.
- Politicians academicians and doctors do need to know what people think about one thing or the other.
- How people feel about national language, public school, family planning and child marriages.
- What type of physical education people prefer.
- What people will feel if the Olympic games are stopped.

## 3. **Trend survey :**

This type of descriptive study is conducted to predict the course of certain events to ascertain the effect of certain phenomenon. The datas are collected on longitudinal basis inducting what has been happening in the past, what present situation reveals and how existing data would cast shadows on the future course of things or how things likely to happen in future.

## 4. **Cross sectional survey :**

In this type of survey to evaluate change occurring in a phenomenon under observation. In a longitudinal survey, change is monitored over a period of time without changing subjects, in cross sectional survey change is evaluated partially at a point of time involving a cross section of the population.

**5. Co relational survey :**

It is designed to estimate the extent to which different variable are related to one another in the phenomenon under consideration. The researcher here takes one long steps further from consideration of characteristics isolation, to comparing them with one another in operational terms within the people.

**6. Evaluation survey :**

It is a simple extension of action research. It is intended to assess the performance or progress of a class, group or team on a given skill or strategy periodically over a period of time. In this type of investigation has to concentrate only one group a class of team club etc. Physical education teacher evaluate performance of each class or team monthly, quarterly, and yearly.

7. Comparative study could be conducted on a athletics practicing group and a non-athletic practicing group on some selected variables of health and fitness. Here the researcher desires to obtain data that might enable him to describe which of two situations is superior in terms of pre stated research situation.

**Scope of survey in physical education and sports.:**

The several scope of survey in physical education and sports are as given below.

- It can be international, national, regional, institutional or local.
- Areas are more extensive, evaluative, comparative or longitudinal.
- Different types of people – Administration teachers, coaches etc.
- Environmental – health practices, health services, health supervision.
- Recreation – community recreation, commercial recreation recreational activities.
- Organisation – sports organisation, association, federation etc.

- Facilities – Sports equipment and infrastructure of department, School, college, university etc.
- Public opinions- sports, competition training etc.

### **Criteria of good survey :**

Following criteria of good survey are.

#### **4. Survey should have some purpose.**

Survey on injuries, health, fitness education etc. should have some clear purpose and there must exist some.

- Limitations of survey should be clearly defined and its boundaries, terms of geographical area, subjects, variables, means and methods etc. should be demarcated at the outset of that the study does not go beyond legitimate boundaries and control.
- Technical terms must be defined.
- Characteristics of the sample have to be stated.
- Time limits must be determined.
- Ensure that data would be able to collect easily.

Technique of collecting data must be relevant, objective reliable and representative of the population.

- Whether the survey is quantitative or qualitative, the findings must be based upon sound philosophy, valid standards and accurate measurements.
- Facts must be reported truthfully and in systematic manner.
- Report must mention the strength and weakness.

Conclusions should serve as light for future planning.

Finally survey should be logically presented.

### **Major Steps in survey :**

Major steps involved in survey are given below :

#### **1. Defining the problem :**

Clear and authentic statement of the situation scope, objectives and significance of the problem must be defined.

2. **Planning : Planning is the key of survey.**

Study, under this heading selection of data gathering tools and techniques. source of funds, supplies facilitate, equipment availability of trained personals etc.

3. **Collection of Data :**

Survey is data gathering and major sources of data on physical education and sport are (a) documents i.e. performance records, reports, films, printed material etc. b) function i.e. teaching, coaching, training managements, supervision etc. (c) Human beings i.e. students, teachers, administrators, participants, institution head etc. (d) natural elements i.e. weather, climate, topography, water etc.

Techniques of obtaining data from these sources include observations, case studies, questionnaires, job analysis, bio-mechanical analysis of movements through, movies, video, computer etc.

4. **Organization and intepretation of Data :**

Systematic organised data appropriately tabulated and statistically treated show up meaningful relationship among variables under consideration. interpretation process like, statistical analysis establishing hypotheses, drawing inferences making judgements predicting, reasoning constructively drawing analogies, and being intellectually discriminating. The conclusions drawn must be precise, logical, forceful and supported by concrete evidence.

5. **Reporting :**

The report must be a unitary effort with each of its units logically consistent with and related to one another. Ambiguity in content or language is very likely to darken the image of the researcher and beauty of the study.

6. **Follow up :** No survey is complete without a follow-up survey, report will become a meaning less document unless recommendations and suggestions contained in it for

further improvement of policies, programmes, processes and procedures of phenomenon are implemented in letter and spirit.

### **CASE STUDY :**

The case study is used to provide detailed information about an individual's institution, community etc. In other words, case study without any doubt, is a status study of the life cycle or an important part of the life of an individual, a social group or a community deeply probing or analyzing the inter-activity among the factors that explain its present status or the ones that influence growth or change in the case under observation.

The results and findings of the case study are also unique as it is an exclusive and intensive exploration of the contributive factors of the natural growth and development of the unit over time.

### **Advantages of case study :**

There are following advantages of case study are :

- It gives direct insight into the personality and behavioural dynamics of the case under consideration.
- It helps to tracing the natural history of a social unit being studied.
- No other research technique is so powerful medium of intensive investigation of a unit as case study.
- It has therapeutic value as it may address to problems of human behaviour and management.
- In social research, case study is considered as the best technique of gathering generalized information about individual units.
- Apart from its emphasis on biographic analysis and anatomy of a unit case study suggests corrective measures for its improvement.

### **Data collection in case study :**

Collection of data is one of the most important tasks of investigator in case study. Investigator may use to standardized questionnaire, psychological tests and personality inventories for data collection in case study.

**3. Experimental Research :**

Traditionally regarded as the most scientific of all the approaches used, the researcher attempts to manipulate the influence of variable in order to arrive at cause, effect relationship, rather than rely upon existing data examples of such approaches include the use of both controlled laboratory and field investigation. Which is briefly explain in next chapter]

**4. Qualitative Research :**

Research method that involves intensive long time observation in a natural settings, interpretation and analysis of the data using description, narratives quotes, charts and tables.

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